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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/669,556	09/26/2000	David E. Simmen	ST9-99-184	4709

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George H Gates  
Gates & Cooper LLP  
Howard Hughes Center  
6701 Center Drive West - Suite 1050  
Los Angeles, CA 90045

EXAMINER

NGUYEN, CINDY

ART UNIT PAPER NUMBER

2161

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/669,556

Applicant(s)

SIMMEN, DAVID E.

Examiner

Cindy Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 May 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-11,13-21 and 23-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-11,13-21 and 23-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This is in response to communications filed 05/21/04.

In view of the Appeal Brief filed on 05/21/04, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

### ***Double Patenting***

Claims 1, 3-30 are provisionally rejected on the ground of nonstatutory double patenting over claim1-33 of copending Application No. 10/807871. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: generating cardinality estimates for one or more query execution plans for the query using statistics of one or more automatic summary tables that vertically overlap the query and suing the generated cardinality estimates to determine an optimal query execution plan for the query.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other

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copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacLeod et al. (US 6434545) (MacLeod) in view of Bello et al. (US 6496819).

Regarding claims 1, 11 and 21, MacLeod disclose: a method, an apparatus and an article of manufacture comprising a program storage medium readable by a computer (fig. 1, MacLeod) and embodying one or more instructions executable by the computer to optimizing execution of a query that accesses data stored on a data store connected to a computer (6, lines 63-66, MacLeod), comprising: generating cardinality estimates for one or more query execution plans for the query using statistics of one or more tables that vertically overlap the query (col. 7, lines 5-65, MacLeod); using the generated cardinality estimates to determine an optimal query execution plan for the query ( col. 7, lines 55-60). However, MacLeod didn't disclose: automatic summary tables. On the other hand, Bello discloses: automatic summary tables as materialized view (col. 10, lines 8-45, Bello). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the automatic summary

table in the system of MacLeod as taught by Bello. The motivation being to enable the system determines whether the materialized view is actually eligible to be used in rewrite of the received query to reduce the execution cost of the query.

Regarding claims 3, 13 and 23, all the limitations of these claims have been noted in the rejection of claims 1, 11 and 21 above. In addition, MacLeod/Bello disclose: wherein the statistics of the one or more automatic summary tables are used to improve a combined selectivity estimate of one or more predicates of the query (col. 8, lines 20-54, MacLeod).

Regarding claims 4, 14 and 24, all the limitations of these claims have been noted in the rejection of claims 3, 13 and 23 above. In addition, MacLeod/Bello disclose: wherein the predicates are applied by one of the automatic summary tables (col. 8, lines 20-54, MacLeod).

Regarding claims 5, 15 and 25, all the limitations of these claims have been noted in the rejection of claims 4, 14 and 24 above. In addition, MacLeod/Bello disclose: wherein the selectivity estimate comprises a ratio of a cardinality of the automatic summary table to a product of cardinalities of base tables referenced in the automatic summary table and the query (col. 6, lines 10-61, MacLeod).

Regarding claims 6, 16 and 26, all the limitations of these claims have been noted in the rejection of claims 3, 13 and 23 above. In addition, MacLeod/Bello discloses: : wherein zero or more predicates of the query are applied by one of the automatic summary tables and wherein the remaining predicates are eligible to be

applied on the automatic summary table (col. 10, lines 20-45, Bello). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the remaining predicates are eligible to be applied on the automatic summary table in the system of MacLeod as taught by Bello. The motivation being to enable the system determines whether the materialized view is actually eligible to be used in rewrite of the received query to reduce the execution cost of the query.

Regarding claims 7, 17 and 27, all the limitations of these claims have been noted in the rejection of claims 6, 16 and 26 above. In addition, MacLeod/Bello disclose: wherein a predicate is eligible to be applied on the automatic summary table if it can be evaluated using the output columns and expressions of the automatic summary table (col. 11, lines 30-55, Bello).

Regarding claims 8, 18 and 28, all the limitations of these claims have been noted in the rejection of claims 7, 17 and 27 above. In addition, MacLeod/Bello disclose: further comprising determining a subpredicate combined selectivity estimate of the unapplied eligible predicates using column distribution statistics of the automatic summary table (col. 10, lines 30-36, Bello).

Regarding claims 9, 19 and 29, all the limitations of these claims have been noted in the rejection of claims 8, 18, and 28 above. In addition, MacLeod/Bello disclose: wherein a cardinality ratio comprises a ratio of a cardinality of the automatic summary table to a product

of cardinalities of base tables referenced in the automatic summary table and the query (col. Col. 8, lines 20-55, MacLeod).

Regarding claims 10, 20 and 30, all the limitations of these claims have been noted in the rejection of claims 9, 19 and 29 above. In addition, MacLeod/Bello disclose: wherein the selectivity estimate comprises a product of the subpredicate combined selectivity estimate and the cardinality ratio (col. 7, lines 55-60, MacLeod).

### **1. Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Subramanian et al. (U.S 6275818). Cost based optimization of decision support queries using transient views.

### **2. Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 703-305-4698. The examiner can normally be reached on M-F: 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone numbers for the organization where this application or proceeding is assigned are 571-272-4025 for regular communications and 703-746-7240 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Cindy Nguyen  
December 26, 2005



MOHAMMAD ALI  
PRIMARY EXAMINER